AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-31. (canceled).

32. (currently amended): An illumination system for a microlithography projection exposure system, the illumination system comprising:

an optical imaging system for imaging an object field arranged in an object plane of the imaging system into an image field arranged in an image plane of the imaging system, wherein:

the optical imaging system ~~including~~ includes a plurality of lenses that are arranged between the object plane and the image plane, ~~and in each case have~~ wherein each of the lenses has a first lens surface and a second lens surface, and

at least one of the lenses ~~being~~ is a double aspheric lens ~~where~~ in which each of the first lens surface and the second lens surface is an aspheric surface.

33. (previously presented): The illumination system as claimed in claim 32, wherein the first lens surface and the second lens surface of the double aspheric lens are shaped to be substantially symmetrical relative to one another.

34. (previously presented): The illumination system as claimed in claim 32, wherein the first lens surface and the second lens surface of the double aspheric lens have substantially the same surface description with reference to curvature and aspheric constants.

35. (previously presented): The illumination system as claimed in claim 32, wherein the first lens surface and the second lens surface of the double aspheric lens are shaped such that they can substantially be transformed into one another by means of an orthotomic projection.

36. (currently amended): The illumination system as claimed in claim 32, wherein the first lens surfaces and the second lens surface of the double aspheric lens are ~~similar aspheres in the sense that~~ shaped such that they can be tested with the same test optics.

37. (canceled).

38. (currently amended): The illumination system as claimed in claim ~~37,~~ 32, wherein the double aspheric lens is arranged in ~~a lens region close to a field in which~~ the vicinity of a field plane of the imaging system such that the principal ray height is ~~large by comparison with~~ greater than the marginal ray height of the imaging system at the double aspheric lens.

39. (previously presented): The illumination system as claimed in claim 32, wherein the imaging system is an objective for imaging an illumination field, arranged in an intermediate field plane of the illumination system, into an exit plane of the illumination system.

40. (previously presented): The illumination system according to claim 39, wherein the imaging system has a linear magnification between approximately 1:1 and 1:5.

41. (previously presented): The illumination system as claimed in claim 32, wherein the double aspheric lens is the last lens of the imaging system, closest to the image plane.

42. (previously presented): The illumination system as claimed in claim 32, wherein the double aspheric lens is a substantially symmetrical biconvex lens.

43. (previously presented): The illumination system as claimed in claim 32, wherein the double aspheric lens is shaped as a meniscus lens.

44. (previously presented): The illumination system as claimed in claim 43, wherein the meniscus lens has an image-side convex surface.

45. (currently amended): An optical imaging system for a microlithography projection exposure system for imaging an object field arranged in an object plane of the imaging system into an image field arranged in an image plane of the imaging system, the imaging system comprising:

a plurality of lenses that are arranged between the object plane and the image plane, wherein:

the plurality of lenses ~~having~~ comprise a first aspheric lens surface and at least one second aspheric lens surface, and

the first aspheric lens surface and the second aspheric lens surface have substantially the same surface description with reference to curvature and aspheric constants

~~the first aspheric lens surface and the second aspheric lens surface being deformed similarly in such a way that they can be tested with the same test optics.~~

46. (canceled).

47. (currently amended): ~~The optical imaging system as claimed in claim 45,~~ An optical imaging system for a microlithography projection exposure system for imaging an object field arranged in an object plane of the imaging system into an image field arranged in an image plane of the imaging system, the imaging system comprising:

a plurality of lenses that are arranged between the object plane and the image plane, wherein:

the plurality of lenses comprise a first aspheric lens surface and at least one second aspheric lens surface, and

~~wherein~~ the first aspheric lens surface and the aspheric second lens surface are shaped such that they can substantially be transformed into one another by means of an orthotomic projection.

48. (previously presented): The optical imaging system as claimed in claim 45, wherein the first aspheric lens surface and the second aspheric lens surface are formed on the same lens, whereby a double aspheric lens is formed.

49. (previously presented): The optical imaging system as claimed in claim 45, wherein the first aspheric lens surface and the second aspheric lens surface are formed on different lenses.

50. (previously presented): The optical imaging system as claimed in claim 49, wherein at least one other optical surface is arranged between the first aspheric lens surface and the second aspheric lens surface.

51. (previously presented): The optical imaging system as claimed in claim 45, wherein the imaging system is a projection objective for imaging a pattern of a mask arranged in an object plane of the projection objective into the image plane of the projection objective.

52. (previously presented): The optical imaging system according to claim 45, wherein the imaging system is a subsystem integrated in an illumination system of a microlithography exposure apparatus.

53. (new): The optical imaging system as claimed in claim 47, wherein the first aspheric lens surface and the second aspheric lens surface are formed on the same lens, whereby a double aspheric lens is formed.

54. (new): The optical imaging system as claimed in claim 47, wherein the first aspheric lens surface and the second aspheric lens surface are formed on different lenses.

55. (new): The optical imaging system as claimed in claim 54, wherein at least one other optical surface is arranged between the first aspheric lens surface and the second aspheric lens surface.

56. (new): The optical imaging system as claimed in claim 47, wherein the imaging system is a projection objective for imaging a pattern of a mask arranged in an object plane of the projection objective into the image plane of the projection objective.

57. (new): The optical imaging system according to claim 47, wherein the imaging system is a subsystem integrated in an illumination system of a microlithography exposure apparatus.